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UNIVERSITY OF IDAHO
COLLEGE OF AGRICULTURE

EXTENSION DIVISION

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# Fifth Year Canning

*By*

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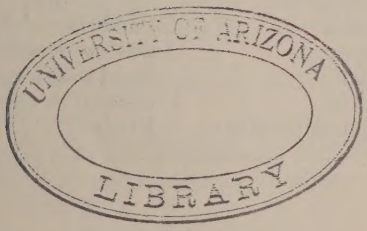


COOPERATIVE EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS
OF THE STATE OF IDAHO UNIVERSITY OF IDAHO COLLEGE OF
AGRICULTURE AND UNITED STATES DEPARTMENT OF
AGRICULTURE COOPERATING

BOYS' AND GIRLS' CLUBS

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# Fifth Year Canning Requirements

| For Completion | For Exhibits |
|---|---|
| 5 quarts of soup mixtures | 3 varieties of soup mixture |
| 3 quarts of fruit juices | 2 varieties of fruit drinks |
| 5 quarts of fruit, (including 3 berries and 2 hard fruits) | 3 varieties of meat |
| | 2 varieties of preserves |
| | 3 varieties of relish or pickles |
| 5 quarts of vegetables | 2 varieties of dried products |
| 5 quarts of meat | 1 poster showing a balanced meal using any products canned in the Fifth Year Project |
| 3 pints of preserves | |
| 3 pints of relish | |
| 3 pints of pickles | |
| 2 pounds of dried products | |

# Fifth Year Canning

## Preserves, Conserves, Jams

MARMALADES, jams, preserves, etc., are various classes of preserves that have been cooked in enough sugar to make a thick consistency. They are similar, but there is some difference in the way the fruit is preserved. In all cases, good products are necessary, and beet sugar is used in all.

**Preserves** are usually made of one fruit, the fruit being left whole or cut in large pieces and cooked in syrup until transparent and tender. The shape of the fruit is retained and is surrounded by a thick syrup when packed in containers. Usually the proportion of ¾ cup of sugar to 1 pound of fruit is used.

Hard fruits such as quince, apples, melon rind, and pears should be cooked in a thin syrup until nearly tender and then finished cooking in a heavy syrup until done.

All containers must be sterile.

### Steps in Making Preserves

1. Assemble, sterilize equipment—broad bottom kettle, measuring cup, long-handled spoon, etc.
2. Wash and pick over fruit.
3. Weigh or measure fruit, sugar, liquid. (Cook small quantities at a time—2 to 3 quarts.)
4. Make syrup (thin), add fruit, and cook slowly until nearly tender.
5. Add preserves to heavy syrup. Continue cooking until done.
6. Cool rapidly for good color and flavor. Stir from time to time while cooling.
7. Let stand in syrup and plump.
8. Fill sterile containers and seal. Process 15 to 20 minutes at simmering temperature.
9. Wipe off containers.
10. Label, and store in cool place.

### Peach Preserves

1 pound peaches
¾ pound sugar
1 cup water or peach juice
2 peach seeds, cracked
1 slice of lemon

Make syrup of sugar and liquid. Pare peaches, add to partly cooled syrup and bring gently to boil. Boil rapidly until clear and tender. Cool rapidly. Let stand in syrup to plump. Pack in sterile containers. Reheat syrup and add. Seal. Process 5 minutes. Store.

### Cherry Preserves

1 pound cherries
¾ pound sugar
½ cup cherry juice

Make syrup of sugar and juice. Add seeded cherries to partly cooled syrup and bring gently to boil. Boil rapidly until clear and tender. Cool rapidly. Let stand in syrup to plump. Fill jars. Reheat syrup. Pour over cherries. Seal. Process 5 minutes. Store.

### Strawberry Preserves

1 pound strawberries
¾ pound sugar
¼ cup juice

Clean and hull berries. Make syrup of sugar and juice. Add berries to partly cooled syrup and bring gently to boil. Boil rapidly until berries are clear and bright and tender (10 to 15 minutes). Cool rapidly. Let stand in syrup to plump. Pack. Add syrup, reheated and thick. Seal. Process 5 minutes. Store.

### Watermelon Preserves

2 tablespoons lime
1 pound watermelon, cut in desired pieces
1 pound sugar
2 quarts water
1 lemon

Remove peel and the pink portion of melon, cut in desired pieces. Soak 2½ hours in lime water (1 tablespoon lime to 1 quart water). Drain and cook until tender, about 1½ hours, in fresh water. Let stand in this water 12 to 24 hours. Make syrup of 1 pound sugar to 1 quart water. Add drained melon and lemon juice. Cook slowly until melon is tender and clear and syrup thick. Let stand in syrup to plump. Pack in sterile containers. Reheat syrup. Pour over watermelon. Seal. Process 5 minutes. Store.

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**Jams** are usually made of one kind of fruit, crushed together, and cooked to a soft consistency, thick enough to spread. Less sugar can be used for jam than preserves usually, or from one-half to three-fourths pound of sugar to one pound of prepared fruit. By using about one-fourth under-ripe fruit in jams, pectin is provided.

### Steps in Making Jam

1. Assemble and sterilize equipment.
2. Pick over and clean fruit.
3. Weigh or measure fruit. Crush a part of it. Place in a kettle over a moderate fire.
4. Heat slowly to boiling. Add none or very little water.
5. When mixture begins to thicken, add sugar. Thoroughly dissolve and then cook rapidly until done (stir to prevent sticking and scorching).
6. Test when done. Fruit remains in place without spreading when tested on plate. Juice should not separate from fruit when cooled.
7. Skim, partially cool. Stir to prevent froth.
8. Fill sterile containers. Seal with hot paraffin and lids.
9. Wipe off containers.
10. Label and store in cool, dry place.

### Strawberry, Blackberry, or Raspberry Jam

1 pound berries
¾ pound sugar
1 teaspoon lemon juice

Clean, stem, and crush slightly a part of the berries to start the juice. Bring gently to boil and when fruit begins to thicken, add sugar. Thoroughly dissolve sugar. Then boil rapidly until done. Partially cool. Pack, seal and store.

### Gooseberry Jam

1 pound gooseberries
1 pound sugar

Clean, stem, slightly crush, and cook until tender. Add sugar and boil rapidly until done. Pack, seal and store.

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**Conserves** are a jam-like product made of two or more kinds of fruits. They may also have nuts added, if desired. Conserves are made of small fruit or fruit cut in small pieces cooked together with sugar until the mixture is even and jelly-like.

### Steps in Making Conserves

1. Assemble and sterilize equipment.
2. Pick over and clean fruits.
3. Weigh or measure fruit and sugar. Cut fine large fruit, or slightly crush small fruit to start juice. (Make only a small quantity at a time).
4. Place in kettle. Heat slowly to start juice. Bring to boil. Add little or no water.
5. When mixture begins to thicken, add sugar. Then cook rapidly. Stir to prevent sticking.
6. If nuts are used, add just before removing from fire.
7. Test as for jam.
8. Skim, partially cool.
9. Fill sterile containers. Seal with hot paraffin and lids.
10. Wipe off containers. Label and store in cool, dry place.

### Peach and Pear Conserve

Equal parts of cubed, firm yellow peaches and pears, the juice and fruit of 2 oranges cubed, 1 cup almond nutmeats chopped. Cook all together until clear. Garnish with slices of lemon on both sides of can, the lemon first having been cooked in a heavy syrup.

### Plum Conserve

3 pounds Damson plums (after cutting)
Juice of 1 lemon
3 oranges
1½ pounds sugar
1 pound seeded raisins
1 cup shelled nuts, pecans preferred

Wash plums and remove stones. Add sugar and raisins. Cook together until plums are thoroughly cooked. Add orange cut in cubes, the nuts and the juice of 1 lemon 10 minutes before plums finish cooking.

### Grape Conserve

2 pints grapes
1 cup seeded raisins
1 cup walnut meats
2 oranges
2⅔ cups sugar
1 lemon

Wash, stem and seed the grapes. Slice the oranges and lemon very thin and add to the grapes. Add the raisins and sugar and cook until the mixture is transparent and thick. Add the chopped walnut meats. Pack while hot in hot, clean jars and seal.

### Apple and Rhubarb Conserve

1½ cups apples, sliced
2½ cups sugar
¾ cup water
2 cups rhubarb, cut in small pieces
½ cup English or black walnut meats

Combine the sugar and water. Boil 15 minutes, add the fruit, cook slowly until mixture is thick and clear. Five minutes before removing from the stove, add the nuts. Pack in clean sterilized containers and seal at once.

### Red Raspberry and Cherry Conserve

1 cup red cherries
1 cup red raspberries
1½ cups sugar

Cook the cherries with small amount of water until the skins are tender. Add sugar. When the sugar is thoroughly dissolved, add raspberries and cook until mixture is thick.

### Medley Fruit Conserve

2 pounds peaches
2 pounds quinces
1½ pounds pears
½ pound apples
3 lemons
Sugar

Wash the fruit; peel or pare, core, and stone the fruit; pass it through a food chopper and weigh. To each pound of fruit allow ¾ pound of sugar. Put fruit and sugar in alternate layers in a bowl, and let stand overnight. Next morning place in preserving kettle with pulp of lemons and one-half the rind sliced in thin strips. Boil until mixture becomes very thick. One cup scalded chopped nuts may be added if desired 5 minutes before removing from fire. Pack hot into hot sterilized jars and seal at once.

### Cranberry Conserve

1 quart cranberries
1 cup raisins
1 cup water
2 oranges, juice and pulp
2 cups sugar

Cook the cranberries, oranges, raisins, and water together until the cranberries burst and the whole mixture is soft. Add the sugar, allow to simmer until thick and seal in sterilized glasses.

### Peach Marmalade

To the pared and sliced peaches, use ¾ pound of sugar to every pound of peaches. Boil the fruit and sugar until the peaches are soft. Add juice and shredded pulp of a very ripe pineapple and the juice of 2 lemons. Cook this mixture on a slow fire for several hours until completely blended and thick. Pack in glasses and cover with paraffin.

### Carrot and Orange Marmalade

12 carrots
2 lemons, juice and grated rind
6 oranges
Sugar
Water

Peel and dice the carrots and cook them until tender, in as little water as possible. Cut the oranges in small pieces and add the juice and grated rind of the lemon. Measure the carrot and fruit and add two-thirds as much sugar. Simmer the mixture until clear. Turn into jelly glasses when cold, cover with hot paraffin.

### Quince Medley

Pare and cut 8 quinces in thin slices. Place in a preserving kettle and add 6 large tart apples, pared and cut in slices; 1 package of seeded raisins; 1 small jar of maraschino cherries, cut in bits; ½ pound stoned prunes; ½ pound figs cut in pieces; 4 pints water. Cook slowly until quinces are soft and then add 4 pounds sugar. Stir to dissolve the sugar and then bring mixture again to a boil. Cook slowly until mixture is thick, like jam. Store in sterilized all-glass jars and seal while scalding hot.

### Apricot, Pineapple, and Nut Conserve

Equal parts of apricots and pineapple. One cup of nuts added. Cook all together until clear. Dried apricots may be used, freshening and then proceeding as with canned or fresh fruit.

### Fruit Honey

Fruit honey is made by grinding the not-too-ripe fruit with a food grinder, adding equal parts of sugar and cooking until clear. Cook and process as usual.

## Score Card*

### Jams, Conserves, and Fruit Butters

Package—Sealed jars of uniform size, clean and neatly labeled.....10

Color—Characteristic of the fruit, free from discoloration due to overcooking or excess of spices. .....20

Consistency. .....30

*Jams* are made from whole small fruits or the fleshy portion of large fruits. No effort is made to retain the shape of the fruit and a more or less homogeneous mixture results.

*Conserves* are similar to jams, but they always contain a mixture of fruits and usually have nuts and sometimes raisins added.

*Fruit Butters* are made by cooking the pulp of fruit or the pomace left from jelly making to a smooth consistency, thick enough to hold its shape and soft enough to spread.

Flavor—Characteristic of the fruit used, free from excessive sweetness, spiciness, or overcooked flavor. .....40

100

* From score cards adopted by Bureau of Home Economics, Washington, D. C.

## Score Card*

### Preserves and Marmalades

Package—Sealed jars of uniform size, clean and neatly labeled.....10

Color—Characteristic of the fruit, clear, free from discoloration due to overcooking. .....20

Consistency. .....30

*Preserves* consist of tender, whole small fruits or uniform pieces of larger fruits in syrup or jellied juice, depending on kind of fruit.

*Marmalades* have the characteristics of both jellies and preserves. They contain the pulp and also may contain the skin suspended throughout the jellied juice. In citrus marmalades both jellied juice and slices or shreds of fruit are clear.

Flavor—Characteristic of the fruit, free from excessive sweetness or overcooked flavor. .....40

100

* From score cards adopted by Bureau of Home Economics, Washington, D. C.

## Tomato and Fruit Juices

### Tomato Juice

Use only firm, fully ripe tomatoes, as fresh from the vines as possible. Wash well, drain, cut into small pieces, remove cores, and cook in small quantities until soft. Pour through sieve. Reheat and add 1 teaspoon of salt for each quart. Pour into sterile containers and seal.

### Raspberry Juice

Use only ripe berries. Crush the berries and heat slowly until the boiling point is reached. Remove from the stove. Let settle and strain through jelly bag. Add ¼ cup sugar for each quart of juice. Reheat. Fill sterile containers with the hot juice. Process 5 minutes in water bath.

### Grape Juice

Use ripe fruit. Wash, crush the fruit. Strain and allow to settle several hours. Drain the juice. Add ¼ cup sugar to each quart of juice. Pour into sterile containers and process. Seal.

Note: The same method as raspberries may be used if desired.

### Currant Juice

Same method as for raspberry juice.

### Cherry Juice

Same method as for raspberry juice.

**CORRESPONDING GAUGE PRESSURE AND PROCESS TEMPERATURE**

**Gauge pressure corresponding to specified process temperatures at various altitudes.***

| Temp. Deg. F. | Sea Level | Feet above sea level | | | | | | | Temp. Deg. C. |
|---|---|---|---|---|---|---|---|---|---|
| | | 500 | 1000 | 2000 | 3000 | 4000 | 5000 | 6000 | |
| 225 | 4.2 | 4.5 | 4.7 | 5.2 | 5.7 | 6.2 | 6.6 | 7.1 | 107.2 |
| 240 | 10.3 | 10.5 | 10.8 | 11.3 | 11.7 | 12.2 | 12.7 | 13.1 | 115.6 |
| 250 | 15.1 | 15.4 | 15.6 | 16.1 | 16.6 | 17.1 | 17.5 | 18.0 | 121.1 |

*This table is taken from the National Canners Association Bulletin 26-L (Third Ed.) "Processes for Non-Acid Canned Foods in Metal Containers." June 1937.

## Evidences of Spoilage*

Foods canned in tin sometimes show the following evidences of spoilage:

*Buckled cans.*—Cans that have caved in, or collapsed, on the sides are called buckled cans. This may occur when No. 3 or larger-sized cans are cooled too quickly after processing. These large cans should be allowed to remain in the cooker until the pressure gauge has reached zero to avoid a too sudden change of pressure. Cans of smaller sizes when slack-filled sometimes buckle on cooling and break the seams. In this case the food should be put into other cans and reprocessed, or used at once.

*Springers.*—Springers are cans with bulged ends. The ends of cans generally become convex, or outwardly curved, during processing because of expansion of the food and the formation of steam. When the cans cool the ends should snap back to a concave, or inwardly curved, position. If a can is too full, the ends may not snap back into proper position. Such a can is called a springer. Such cans should be marked so they will not be confused with those that become bulged during storage.

*Swelled Cans.*—When gas is formed within a can it may cause the ends to bulge. For example, some fruits, such as prunes, apples, and some berries, react with the metals of the can, and hydrogen gas is liberated. When this collects, the can may become a "hydrogen swell." In this case the food itself is not affected. However, in several types of food spoilage, gases are produced that cause swelled cans. For this reason, bulged ends on a can are regarded as an indication of spoilage. When canned fruits show such a condition, they should be examined for other indications of spoilage. When a can of meat or non-acid vegetables has bulged ends, it should be disposed of by burning.

*Perforations.*—Some of the fruits that react with the metals of the can producing hydrogen swells may also cause perforations and leaks. This results from the centering of the chemical reaction on a few points. If the can is discovered soon after leaking starts, the food may be used, but if the leakage is not detected until later, fermentation or other types of spoilage may have set in.

Canned foods are likely to develop perforations and hydrogen swells rather quickly if stored in too warm a place, hence cool storage is especially important for canned fruits that react in this way on the metal.

## Frozen Canned Foods

Freezing does not cause canned foods to spoil unless it breaks the seal and permits micro-organisms to enter. All frozen canned foods should, therefore, be examined for leakage. Sometimes freezing may bulge tin cans and spread the seams enough to permit bacteria to enter and yet not cause leakage. Bulged cans of frozen food should be used as promptly as possible if they cannot be kept frozen.

* Taken from U. S. D. A. Farmers' Bulletin No. 1762, "Home Canning of Fruits, Vegetables and Meats."

## Suggestions for Club Meetings

**First Meeting—*Organization***

1. Call to order.
2. Roll call.
3. Election of officers.
4. Selection of time and place for meetings.
5. Announcements and explanation of requirements by leader.
6. Appointment of demonstration team for following meeting.
7. Club pledge.
8. Games.
9. Dismissal.

**Second Meeting**

1. Call to order.
2. Roll call.
3. Review steps in making preserves.
4. General discussion.
5. Demonstration of any kind of fruit preserves, using available fruits.
6. Appointment of demonstration team for next meeting.
7. Club songs.
8. Club pledge.
9. Dismissal.

**Third Meeting**

1. Call to order.
2. Roll call.
3. Review of requirements by leader.
4. Practice demonstration.
5. Appointment of demonstration team for following meeting.
6. Club pledge.
7. Games.
8. Dismissal.

**Fourth Meeting**

1. Call to order.
2. Roll call.
3. Demonstration of conserves, using available fruits.
4. Appoint committee to bring cookies or sandwiches to use with fruit juices demonstration.
5. Picnic lunch.
6. Appoint committee to have materials on hand for next meeting.
7. Club pledge.
8. Games.
9. Dismissal.

**Fifth Meeting**

1. Call to order.
2. Roll call.
3. Judging contest, using score card, judging conserves and preserves.

4. Appointment of demonstration team for next meeting.
5. Club pledge.
6. Games.
7. Dismissal.

**Sixth Meeting**

1. Call to order.
2. Roll call.
3. Appointment of committee to plan menu for club party.
4. Two demonstrations:
   a. Canning fruits.
   b. Preparation of fruit juices.
5. Report on record books.
6. Song.
7. Club pledge.
8. Dismissal.

**Seventh Meeting**

1. Club party.
2. Appointment of demonstration teams for next meeting.

**Eighth Meeting**

1. Call to order.
2. Roll call.
3. Demonstration on:
   a. Meat canning.
   b. Canning of soup mixtures.
4. Report on home work.
5. Song.
6. Club pledge.
7. Dismissal.

**Ninth Meeting**

1. Call to order.
2. Roll call.
3. Suggestions for planning posters for exhibit.
4. Club pledge.
5. Games.
6. Dismissal.

**Tenth Meeting**

1. Call to order.
2. Roll call.
3. General review.
4. Report on home work.
5. Judging contest.
6. Club pledge.
7. Games.
8. Dismissal.

**Eleventh Meeting**

1. Call to order.
2. Roll call.

3. General plans for Achievement Day.
4. Completion of record books.
5. Review on problems involved in the year's work in canning.
6. Song.
7. Club pledge.
8. Dismissal.

**Twelfth Meeting**

Achievement Day.—Record books are to be turned in for the final completion of the project, and the club may present exhibits of work done or other activities suitable for the achievement day program.